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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/069,006

02/20/2002

Sarah Fredriksson

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EXAMINER

REDDING, DAVID A

ART UNIT

PAPER NUMBER

1744

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/069,006

Applicant(s)

FREDRIKSSON ET AL.

Examiner

David A. Redding

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,10,12-16,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,10,12-16,18,19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,3,7,9,10,12,16,18,19, are rejected under 35 U.S.C. 102(b) as being anticipated by USP 4,889,120 (Gordon).

Gordon discloses the introduction into the edges of biological structures a minute particle, such as a ferromagnetic, paramagnetic or diamagnetic material and then subjecting the approximate edges to an alternating electromagnetic field generated by an alternating current (col.2, lines37-43). The reference discloses that the biological structures may consist of a vessel (blood vessel) or an artery vein (col.6, lines 56-60). These structures are considered to fall within the claimed "organelles at a sub cellular level". Further, since the effect of the method is at the cellular level of the tissues the method is considered to read on the claimed "biological membrane-enveloped structures including cells". The disclosed method includes suspending the ferromagnetic particles in an aqueous 5% dextrose solution (the claimed chemical preparation) and either applying the solution to the surface of the tissue or injecting the solution into the tissue. Followed by placing the tissue within proximity of a electromagnetic coil in which an alternating current from between .5 kwatt to 100 kwatts at a frequency of between 1Hz to 10,000 megahertz flows (see example # 1; col. 5, line 65 thru col.6, line 15). The patent discloses that the alternating magnetic field heats the particles to a degree that

Art Unit: 1744

the edges of adjoining pieces of tissue connect through **fusion** (col.5, lines 48-65; col.8, lines 13-19).

The reference further discloses that antibody-ferritin complexex can be used as magnetic material (col.4, lines 10-17) or that antibodies can be added to the magnetic particle solution (col. 6, lines 32-37). These materials are considered to be exogenic, as claimed.

It is the examiners opinion that fusion at the cellular level includes the formation of pores, as claimed. Furthermore the formation of pores would also inherently include the introduction or extraction of bioparticles into or from the biological membrane-enveloped structures since at the cellular level intracellular and extra cellular fluid would pass across the porated membrane. The field strength is not disclosed. However, since the current level and frequency is within the range disclosed by applicant so should the resulting field strength.

Fusion and poration would inherently cause some degree of cell lysis and alter the metabolism of the cells involved.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1744

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4-6,13-15, are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 4,889,120 (Gordon) in view of USP 6,149,576 (Gray et al.).

Gray et al. discloses the use of two coils to produce an alternating magnetic field to a biological specimen (examples #2 and #3). Accordingly, it would have been obvious to one skilled in the art that the two coil device in the Gray et al. patent be used to employ the method in Gordon, especially in view of the known use of the device in Gray et al. to induce an alternating magnetic field within a biological tissue.

Response to Arguments

Applicant's arguments filed 12/21/06 have been fully considered but they are not persuasive.

Applicant's arguments concerning "exogenic bioparticles" has been addressed in the 35 U.S.C. 102 rejection in view of USP 4,889,120 (Gordon), cited above.

Applicant appears to argue that since Gordon fails to mention the formation of pores during the method, such an effect does not occur. The examiner disagrees. The initial stages of fusion would include cell membrane poration.

The field strength is a recognized result effective variable in Gordon and if not the same as claimed then it would have been obvious to one skilled in the art to optimize it in view of the method disclosed in Gordon.

In response to applicant's arguments against the references individually (35 U.S.C. 103 rejection in view of Goron and Gray et al.), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Redding whose telephone number is 571-272-1276. The examiner can normally be reached on Mon.-Fri. 6:00 - 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran-Piazza can be reached on 571-272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1744

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David A Redding
Primary Examiner
Art Unit 1744

DAR